

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 14679.

Port of Greenock Date of First Survey 17<sup>th</sup> Mar 1906 Date of Last Survey 27<sup>th</sup> April 1906 No. of Visits 13.  
 No. in on the Iron or Steel Is. Valdivia Port belonging to Glasgow  
 Reg. Book Built at Port Glasgow By whom Russell & Co. When built 1906  
 Owners Gov. Harmer & Co. Owners' Address   
 Yard No. 347 Electric Light Installation fitted by H. Black & Co. When fitted 1906

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

Engine made by Isotopes Lincoln Cylinders 8x14 fitted with Auto. Expansion Flywheel Governor  
8000 Steam pressure 300 lbs Dynamo 4 Pole Compound Wound by M. W. H. Coulson

Capacity of Dynamo 95 Amperes at 100 Volts, whether continuous or alternating current Continuous

Where is Dynamo fixed Main Platform Engine Room Whether single or double wire system is used Double

Position of Main Switch Board near Dynamo having switches to groups 6 of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each 1. Forecastle 2. Navigation (Chart Room) 3. Saloon  
etc (Pantry) 4. Tween Decks (Passage to Engine Room) 5. Clusters (Engine room) 6. Engine Room  
Officers Quarters (Engine Room)

If cut outs are fitted on main switch board to the cables of main circuit Yes and on each auxiliary switch board to the cables of auxiliary circuits Yes and at each position where a cable is branched or reduced in size Yes and to each lamp circuit Yes

If vessel is wired on the double wire system are cut outs fitted to both flow and return wires or cables of all circuits including lamp circuits Yes

Are the cut outs of non-oxidizable metal Yes and constructed to fuse at an excess of 25 per cent over the normal current

Are all cut outs fitted in easily accessible positions Yes Are the fuses of standard dimensions Yes If wire fuses are used

are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit Yes

Are all switches and cut-outs constructed of incombustible materials and fitted on incombustible bases Yes

Total number of lights provided for 132 arranged in the following groups:—

A	<u>14</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>8.4</u>	Amperes
B	<u>10</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>6.0</u>	Amperes
C	<u>22</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>13.2</u>	Amperes
D	<u>14</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>8.4</u>	Amperes
E	<u>30</u>	lights each of	<u>16</u>	candle power requiring a total current of	<u>18.0</u>	Amperes
<u>2</u>	<u>Mast head light with</u>	<u>2</u> lamps each of	<u>32 (double fila)</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
<u>2</u>	<u>Side light with</u>	<u>2</u> lamps each of	<u>32</u>	candle power requiring a total current of	<u>2.4</u>	Amperes
<u>5</u>	<u>Cargo lights of</u>	<u>6-16 cp ea.</u>		candle power, whether incandescent or arc lights	<u>Incandescent</u>	

If arc lights, what protection is provided against fire, sparks, &c.

Where are the switches controlling the masthead and side lights placed Chart Room

## DESCRIPTION OF CABLES.

Main cable carrying	<u>49.2</u> Amperes, comprised of	<u>19</u> wires, each	<u>14</u> L.S.G. diameter,	<u>.944</u> square inches total sectional area
Branch cables carrying	<u>8.4</u> Amperes, comprised of	<u>4</u> wires, each	<u>19</u> L.S.G. diameter,	<u>.0084</u> square inches total sectional area
Branch cables carrying	<u>13.2</u> Amperes, comprised of	<u>4</u> wires, each	<u>14</u> L.S.G. diameter,	<u>.0140</u> square inches total sectional area
Leads to lamps carrying	<u>3</u> Amperes, comprised of	<u>3</u> wires, each	<u>20</u> L.S.G. diameter,	<u>.0031</u> square inches total sectional area
Cargo light cables carrying	<u>3.6</u> Amperes, comprised of	<u>4</u> wires, each	<u>22</u> L.S.G. diameter,	<u>.0042</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Insulated with 1 layer pure India Rubber + 2 layers of Vul. rubber of the standard thickness  
 Protected with 1 proofed tape vul. on to with the vul. rubber, then overall a close cotton  
nylon braid impregnated with syokerite compound

Joints in cables, how made, insulated, and protected Joints well made soldered, resin being used as a flux  
then covered with double reversed lapping of pure rubber tape, with a coating of rubber  
solution before taping each lap. The whole finally served with vulcanite cloth traversed with Shells

Are all the joints of cables thoroughly soldered, resin only having been used as a flux Yes Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage Yes

Are there any joints in or branches from the cable leading from dynamo to main switch board No

How are the cables led through the ship, and how protected By Lead + Armour covering



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible Yes.

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Gal. Iron pipe

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat Lead cover & armour.

What special protection has been provided for the cables near boiler casings Gal. Iron pipe

What special protection has been provided for the cables in engine room Gal. Iron pipe

How are cables carried through beams By means of fibre rings through bulkheads, &c. Watertight Glands

How are cables carried through decks By Iron Deck Tubes flanged to deck.

Are any cables run through coal bunkers No or cargo spaces Yes on spaces which may be used for carrying cargo, stores, or baggage Yes

If so, how are they protected Lead cover & armour clipped to deck

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage Yes

If so, how are the lamp fittings and cable terminals specially protected Completely enclosed in Iron Cases

Where are the main switches and cut outs for these lights fitted Engine Room

If in the spaces, how are they specially protected Wood Dividers

Are any switches or cut outs fitted in bunkers No.

Cargo light cables, whether portable or permanently fixed Portable How fixed By Admiralty Plug & Hex.

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel —

How are the returns from the lamps connected to the hull —

Are all the joints with the hull in accessible positions —

The installation is — supplied with a voltmeter and — an amperemeter, fixed on Main Switchboard

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and cut-outs fitted in positions not liable to the accumulation of petroleum vapour or gas —

Are any switches, cut outs, or joints of cables fitted in the pump room or companion —

How are the lamps specially protected in places liable to the accumulation of vapour or gas —

The copper used is guaranteed to have a conductivity of 99. per cent. that of pure copper.

Insulation of cables is guaranteed to have a resistance of not less than 2500 megohms per statute mile after 24 hours' immersion in seawater.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

Matthew Black & Co.

Electrical Engineers

Date 24.5.06

COMPASSES.

Distance between dynamo or electric motors and standard compass 150ft.

Distance between dynamo or electric motors and steering compass —

The nearest cables to the compasses are as follows:—

Cable carrying	Amperes	feet from standard compass	feet from steering compass
<u>6</u>	<u>6</u>	<u>6</u>	<u>—</u>
<u>13.2</u>	<u>20</u>	<u>20</u>	<u>—</u>
<u>.6</u>	<u>2</u>	<u>2</u>	<u>—</u>

Have the compasses been adjusted with and without the electric installation at work at full power Yes.

The maximum deviation due to electric currents, etc., was found to be — degrees on — course in the case of the standard compass and — degrees on — course in the case of the steering compass.

Russell & Co.

Builder's Signature.

Date 28th May 1906

GENERAL REMARKS.

The materials and workmanship are good. When completed the installation was tested and found to work well.

—

Wm. Austin.

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

Glasgow 4 JUN 1906  
Record Electric Light.

It is submitted that the Elec. Light be noted in a Reg. Book.



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